

Role Played by Covid-19 Pandemic for the Betterment of Nature

Pragati Dixit, Assistant Professor, Department of Physics, St. Martin's Engineering College, dhullapaly, secunderabad, 500010, India

Abstract: This research aims to show the positive and negative indirect effects of COVID-19 on the environment. The paper intends to tell, how the deadly corona virus carried by Bat is spilled among homo-sapiens, which has made more than half of the world population to go home quarantine. Since the disease is highly contagious the lockdown seems to be the only solution to avoid the people coming in contact in social gatherings. The lockdown has slowed the world and increased the difficulties of the peoples Worldwide. Business, factories and industries are shut but more to my amazement this lockdown has helped the nature to thrive again, because the industrial waste and smoke are now not able to coalesce with nature. Water is becoming clearer and the air is becoming cleaner. Birds and animals have started feeling safe without human intervention.

Keywords: Pandemic; corona virus; quarantine; lockdown; hydroxychloroquine (HCQ); Environment; Epidemic

1. Introduction

Did it have to take a lockdown for earth to feel better?
For skies to turn blue?
For rivers to be cleaner?
For animals and birds to feel safer?
For slowing down pollution levels?
For cooling off global warming?
For correcting climate change?

Let us restart the right way, to be kinder to our planet, to build a better post covid world, so the earth can feel better without needing us to stay at home.

Outbreak of any unknown disease grown out of control is referred as EPIDEMIC. When the disease starts spreading actively across geographical area then it is said to be PANDEMIC.

There are many viruses whose outbreak has caused a vigorous destruction to the mankind all over the world. For ex. The Ebola outbreak in west Africa and before 8 years H1N1 flu pandemic across the world. Since then SARS, MERS and many more but no one know when or where there virus 's outbreak can cause dreadful pandemics.

Some group of scientists wants to find all the viruses existing in nature and which are likely to cause tomorrow's outbreak. This project was named as Global VI Rome Project which aims at detecting viruses present in mammals and birds which can spill over into human life. (MANVEL A. ZAMBRANO-MONSERRATE, 2020)

2. Background:

The 2019–20 coronavirus pandemic is an ongoing pandemic. NOVEL CORONAVIRUS (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS- CoV-2). The outbreak was first identified in Wuhan (Hubei) in China, in December 2019, and recognized as a pandemic (STATE OF EMERGENCY) by the World Health Organization (WHO) on 11 March 2020.^[5] As of 23 March, more than 343,000 cases of COVID-19 have been reported in over 190 countries and territories, resulting in more than 14,700 deaths and over 99,000 recoveries. (Chang D, 2020). The no. of corona virus cases is growing rapidly in INDIA, it has been spread almost all the states in the country, since India is a developing nation our only weapon of choice is a complete lockdown in country through which we can control the community transmission of disease. On the flip side of the coin, we can see the things have been changed in just a matter of days and weeks

The thick black clouds of coronavirus have enveloped every part of the world, spreading its aura of terror, but in the midst of such crisis, the nature has got time to repair itself from the damages done by the mankind. (Peeri NC1, 2020 FEB 22)

Due to a complete lockdown most of the factories have been shut which has reduced the amount of industrial waste dumped into rivers and oceans everyday within a month of lockdown period the river ganga has become much cleaner, air pollution levels have come down due to which peoples have reported the beautiful sight of Himalayan ranges from the terrace of their homes in Punjab. (K. Chen, 2020)

Which can be undoubtedly is a sign of nature is healing. Moreover, our Prime Minister Narendra Modiji is doing an incredible work of binding the nation into one thread.

Humanity Is Coming Together As People Sing in Unison

During times of crisis, humanity is coming together as people to sing in unison. Coronavirus might have led to people locked up in their homes, but art and culture is what binds people and brings them together at this time. India found a novel way to keep positivity alive. People come out on their balconies, sing and play instruments and embrace each other through the power of music. They also come out and clapped unanimously to applaud the incredible work of our doctors during such crisis. The streets might be empty but the hearts of people in India are full of warmth and joy.

2.1 Has the Environment Improved because of the Coronavirus?

As institutions and entertainment centers have been shut down, public spaces are empty, there are fewer cars on the roads, pollution levels have come down, and water bodies are cleaner because most people are at home. This coronavirus has hit the **RESET BUTTON** on lot of things and including the mother earth as now it has started healing herself. The most important thing to focus on is **COEXISTENCE**, as humans began retreating from the public places in the fear of corona virus; nature has begun reclaiming its space. Dolphins have returned to Italy's coast thanks to the missing crew ships, there are swans in Italy canals, canals which are occupied by gondolas and tourists.

In Singapore OTTERS are roaming freely in the parks thanks to the empty public space. These signs are the grim reminder of how we humans have taken over the earth we have encroached on the territory of other living being, we destroyed habitats ,killed animals ,overused resources. We do not own this planet we share the planet with lot of other living beings our lives are as much about the cohabitation. We humans cannot be bringing down forests, destroying habitats and polluting oceans putting the survival of other species at stake.

Let The Coronavirus Crisis Leave Us With The Lesson, Learn To Coexist Otherwise Nature Will Find Its Extreme Ways To Reclaim It's Space, think about it!



Figure 1 Recycle Button Hitted on Nature Due to Pademic

2.2 Method of Testing Corona Virus:

The testing is done for the patients who show up the symptoms Fever, Cough, Shortness of breath or even sever pneumonia. Nucleic acid test tells the RNA or DNA of a virus. Scientist first takes a sample from patients usually a throat swab and now we know that the genetic material of the new corona virus is RNA. But most of our tools for this test are specific to RNA. So scientists take virus's RNA as a template and create a complimentary stand and make a DNA copy of that, this process is called reverse transcription. Transcription is the copying of DNA into RNA and we did the opposite hence the name. Now we have massive DNA fragments from everything in this sample patient's own cell, harmless bacteria and so on.

How do we find the Coronavirus?

Sequencing the virus genome by this we know the entire RNA sequence of the new coronavirus it allows us to compare the other virus strains in the family and find what's unique, in other words what is its distinctive signature, if this signature can be found in this sample then it means that the virus exists.

But how it is done?

Scientists will copy small pieces from this distinctive fragment of DNA what they call "primers". (B. Ma, 2019) (Q. Zhang, 2020). Then they heat up the sample to separate the strands of all DNA inside if there are any Traces of new corona viruses the primer will grab onto it and start to make copies. One DNA becomes two and two becomes four until there are billions of copies. In order to make the process easier to observe scientists attach labels wherever the primer is found this means the more viral bits present in your DNA the more brighter it glows telling the scientists that the virus exist in the blood . (Hua Li, 2020)

But testing on highly infectious coronavirus needs to be undertaken in a lab with high biosafety levels usually within a country's disease control authorities there are four levels only the labs with protection levels 3 and 4 are allowed to test such virus, but we don't have enough labs that's why the testing of the virus is relatively slow, we are also performing the CT scan of the lungs to perform a double check. To know more about the virus and which will help to track down the virus fast. (H.Logie, 2020) (Yan Beauvered, 2020) (indranil chakraborty, 2020)

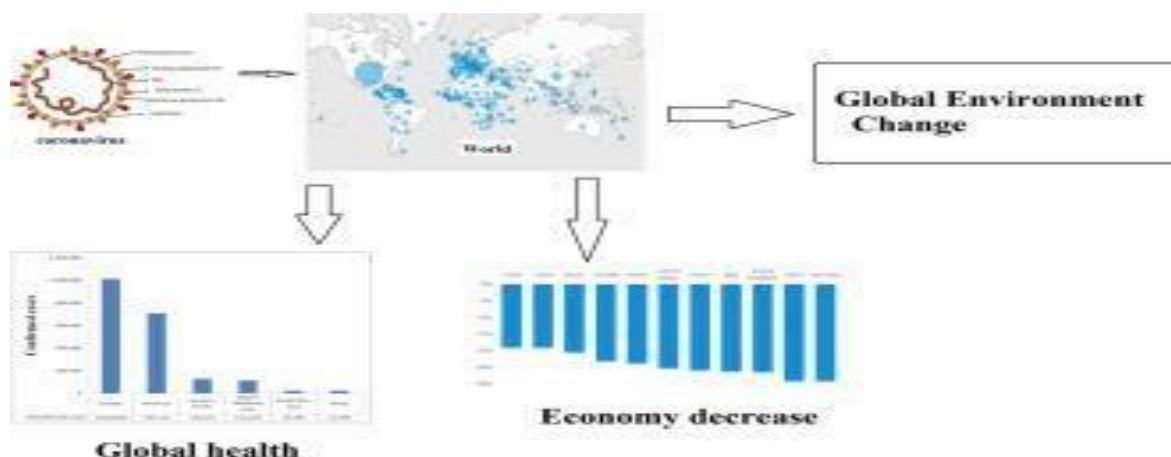


Figure 2

2.3 Preventive Measures by Government:

As since the outbreak of coronavirus in India the no. of covid-19 cases are increasing steadily ,the government soon got into action and have taken all possible preventive measures, because there is no specific antiviral medications approved for COVID-19, but development efforts are going on , including testing of existing medications. Attempts to overcome the symptoms may include taking regular medications of cold, fever, drinking healthy fluids, and resting. Depending on the severity of the condition and for old age patients, oxygen therapy, intravenous fluids and breathing support are required. (Pragya D Yadav, DOI:10.4103/ijmr.IJMR_1035_20) (Pranab Chatterjee, DOI:10.4103/ijmr.IJMR_519_20 PMID:32242874)

- Lockdown in country has been declared already for finite amount of time, which includes restriction on travel, coming out of homes unnecessarily all factories, shops are shut except the necessary groceries mounting for daily need are left open.
- Peoples are instructed to stay at home during this period, and foreign return peoples are instructed to follow a 14 days quarantine period.
- However with the help of telecom and digital media peoples are continuously informed about the preparedness of disease
- Some of the preventive measures include
- 1).wash your hands frequently using soap about 2 Sec or use alcohol based sanitizer.

- 2). cover your mouth and nose while sneezing with tissue and dispose it off, or sneeze with bent elbow to cover your nose.
- 3) Maintain self isolation with people and don't go to overcrowded places.

Recovery from Coronavirus:

Many patients suffering from COVID are recovered from the disease and emerged as a warrior, since India is largest supplier of hydroxychloroquine (HCQ) drug which in the meanwhile has proven to be a greater medical relief for such patients, and now India is also supplying the drug to the other heavily effected countries. (N. Allocati, 2020)

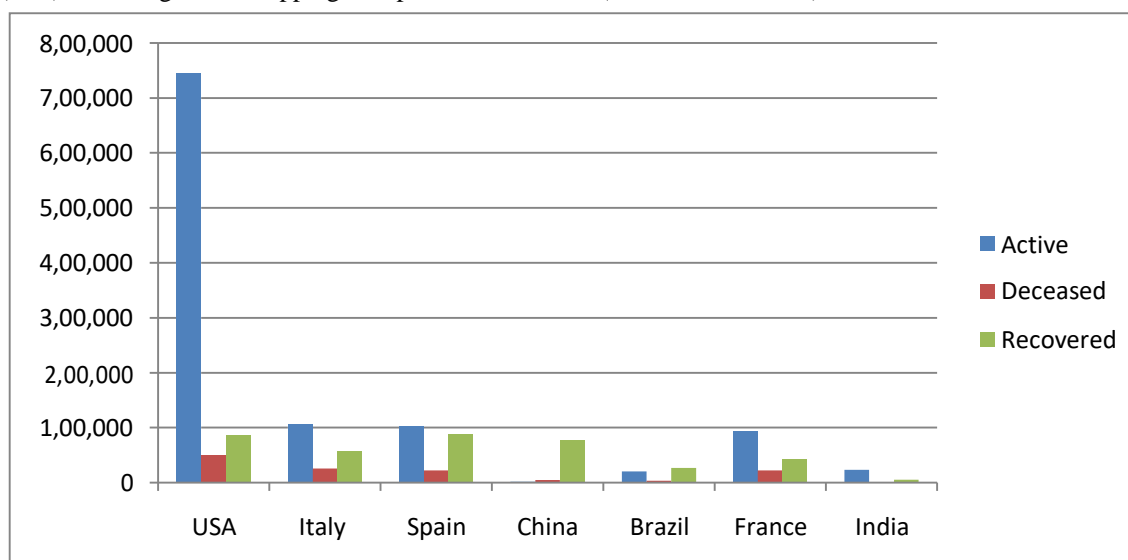
2.4 How Pandemic has Affected Citizens Globally:

As Covid-19 spreads around the wider geographical area around the globe. Governments have imposed isolations and travel bans till a finite amount of time India is screening passengers on the airport itself returning from heavily affected countries and imposing a 14 day quarantine period for every person. Still, the numbers of cases and deaths continue to rise. In public health practice, "quarantine" refers to the separation of persons (or communities) who have been exposed to an infectious disease. "Isolation," in contrast, applies to the separation of persons who are known to be infected. (Pranshu Mohindra, 2020). Inside the country, isolation and quarantine orders have traditionally come from the states. Courts have typically upheld these orders in deference to the states' broad powers to protect public health. (Zhi, 2020 feb 17)

3. Result/Conclusions:

To get onto a conclusion on the ongoing crisis of covid-19, I will wrap up this article by saying the world is facing a dreadful situation, due to the tremendous outbreak of COVID-19 which has never been happened in history. On an average, in every 4 months a new infectious disease emerges in human and 75% of these diseases come from animals Till date more than 1 lakh deaths have been recorded due to corona virus and still counting, not to deny the fact that there are peoples who have also recovered from the disease.

We have to understand the seriousness of the situation and must follow the guidelines given by the government. But life is like a coin comes with two sides, pleasure and pain are equally divided maybe the world has forgotten to look on the other side of the coin. Because of the crisis of covid-19 the cities have been locked across the world the mobility of peoples, vehicles have been reduced, due to this the pollution levels are going down, ozone layer is healing and moreover we learn to coexist because we humans are sharing the planet with lot of other living beings. 75% of infectious diseases are from the animals, if we can create a healthy ecosystem, then diversity of species will not let the pathogen to spread rapidly. Countries across the world were ill prepared to fight the pandemic. Future research should attempt to address the uses and implications of internet of things (IOT) technologies for mapping the spread of infection. (VIGILIONE, 2020)



Heavily affected countries from coronavirus

References

- [1]B. Ma, X. L. (2019). Recycle More, Waste More? When Recycling Efforts Increase Resource Consumption. *Google Scholar*, 20.
- [2]Chang D, X. H. (2020). Protecting Health-Care Workers From Subclinical Coronavirus Infection. . *Lancet Respir Med*, 20.
- [3]H.Logie, C. (2020). Lessons Learned from HIV Can Inform Our Approach to COVID-19 Stigma. *JIAS*, 10.
- [4]Hua Li, Z. L. (2020). Scientific Research Progress of COVID-19/ SARS-Cov-2 in The First Five Months. *Journal Of Celular And Molecular Medicine*, 35.
- [5]Indranil Chakraborty, P. M. (2020). COVID-19 Outbreak: Migration, Effects on Society, Global Environment And Prevention. *Elsevier*, 30.
- [6]K. Chen, M. W. (2020). Air Pollution Reduction and Mortality Benefit During The COVID-19 Outbreak in China. *Medrxiv*, 20.
- [7]MANVEL A.ZAMBRANO-MONSERRATE, M. A.-A. (2020). Indirect Effects Of COVID-19 On The Environment. *Elsevier*, 10.
- [8]N. Allocati, A. P. (2020). Bats, Coronaviruses, And Deforestation: Toward The Emergence Of Novel Infectious Diseases? *Google Scholar*, 20.
- [9]Peeri NC1, S. N. (2020 FEB 22). The SARS, MERS And Novel Coronavirus (COVID-19) Epidemics, The Newest and Biggest Global Health Threats: What Lessons Have We Learned? *Int J Epidemiol*, 1.
- [10] Pragya D Yadav, A. S.-A. (DOI:10.4103/Ijmr.IJMR_1035_20). Detection of Coronaviruses in Pteropus & Rousettus Species of Bats From Different States Of India. *Ijmr*, 10.
- [11] Pranab Chatterjee, N. N. (DOI:10.4103/Ijmr.IJMR_519_20 PMID:32242874). The 2019 Novel Coronavirus Disease (COVID-19) Pandemic: A Review of The Current Evidence. *Ijmr*, 13.
- Pranshu Mohindra, C. R. (2020). Radiation Therapy Considerations During The COVID-19 Pandemic: Literature Review And Expert Opinions. *Journal Of Applied Clinical Medical Physics*, 20.
- [12]Q. Zhang, X. J. (2020). Transboundary Health Impacts of Transported Global Air Pollution and International Trade. *Nature*, 20.
- [13]VIGILIONE, G. (2020). How COVID-19 Could Ruin Weather Forecasts and Climate Records. *Nature*, 10.
- [14]Yan Beauvered, Y. A. (2020). COVID-19 Infection and Treatment with Hydroxychloroquine Cause Severe Haemolysis Crisis in A Patient with Glucose-6-Phosphate Dehydrogenase Deficiency. *European Journal Of Heamatology*, 15.
- [15]Zhi, Z. L. (2020 Feb 17). The Epidemiological Characteristics of An Outbreak of 2019 Novel Coronavirus Diseases (COVID-19) in China. *Pubmed*, 1.

Acknowledgements: I am thankful to all my fellow professors, HOD and principal of our college for inspiring me throughout the journey. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.